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THE UNIVERSITY *of* EDINBURGH
School of Health in Social Science

Research on health in prison settings in Scotland – a colloquium

Lisa Schölin, Aisha Holloway, Matthias Schwannauer
and Brian McKinstry

Contents

Executive summary	i
Foreword	ii
Abbreviations	iii
Introduction	1
Prison health as public health	1
Health promoting prisons	1
Health of people who experience incarceration	2
Communicable diseases	2
Noncommunicable diseases (NCDs)	2
Mortality	3
The health of the Scottish prison population	4
The Scottish prison population	4
Health in the Scottish prison estate	5
Prison health governance in Scotland	6
National Prisoner Healthcare Network	7
Justification for the event	8
Event description	9
Presentations	9
Event feedback	10
Future research priorities	12
Defining prison health research priorities using the Delphi method	12
Launch of a Scottish prison health Delphi study	13
Discussion	14
References	15

Executive summary

The health of people in prison is significantly poorer than that of the general population and with the majority of sentenced people returning to the community, improving the health of this population is important from a wider public health perspective. Since 2011, prison healthcare services in Scotland are managed by the National Health Service (NHS), whereas it previously was managed by the Scottish Prison Service (SPS). The transfer followed on from recommendations from the Prison Healthcare Advisory Board (PHAB), set up by Scottish Ministers, which was established in 2007. However, five years on the Royal College of Nursing (RCN) assessed the progress of the transfer and concluded that several areas need further improvement. The RCN report prompted an inquiry by the Scottish Parliamentary Health and Sport Committee (SPHSC), which led to the establishment of the Health and Social Care in Prisons Programme Board, with the aim of improving prison healthcare.

On the backdrop of the inquiry, an event was held on 4 June 2018, with key stakeholders in the area of prison health to explore recent and current research in Scotland. The aim of this event was to gain a better understanding of current research activities and to facilitate discussion around future research priorities. The event was attended by academics, representatives from NHS and SPS, third sector organisations, freelance researchers, government officials, and the Public Health Minister. This report provides a brief overview of health in prison settings; the policy context in Scotland; a summary of the content of the event, emerging issues, feedback of participants; and next steps in further developing prison health research in Scotland.

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Foreword

The philosopher Thomas Hobbes wrote in 1651, in his book “Leviathan”, that life outside society would be ‘solitary, poor, nasty, brutish, and short’. Several hundred years later, that description can equally apply to the lives of many of those who are imprisoned. They carry higher burdens of ill health, particularly of mental health, alcohol and drug problems as well as infectious diseases compared to the general population. Many have experienced traumatic childhoods and continue to experience social exclusion and disadvantage into adulthood, including access to health and social care services. Prisons offer an opportunity to deliver person-centred, safe and effective health and care interventions that can benefit not only individuals, but also their families, and the wider community by reducing health inequalities and reoffending. Good health and social care in prisons needs to be informed by a robust evidence base. Prison health research contributes to that evidence base.

Health in justice settings has rightly risen up the public health agenda in Scotland. The recently established Scottish Government Health and Social Care in Prisons Programme is driving forward improvements. This report is therefore both timely and welcome. It will, I am sure, stimulate both thought and action to drive forward prison health research here in Scotland and beyond.

Dr Lesley Graham

Clinical Lead for Alcohol, Drugs, Tobacco and Health in Justice, ISD Scotland

Member of the National Prisoner Healthcare Network

Member of the Scottish Co-ordinating Group for the 5 Nations Health and Justice Collaboration

Member of the Steering Group, WEPHREN

Abbreviations

BBV	Blood-borne viruses
CDR	Crude death rate
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
FAI	Fatal Accident Inquiry
GPASS	General Practice Administration System for Scotland
NCD	Noncommunicable disease
NPHN	National Prison Healthcare Network
NPS	New psychoactive substances
OR	Odds ratio
OST	Opiate substitution therapy
PHAB	Prison Healthcare Advisory Group
RCN	Royal College of Nursing
SCG	Scottish Co-ordinating Group (5 Nations Health and Justice Collaboration)
SMR	Standard mortality rate
SPHSC	Scottish Parliamentary Health and Sport Committee
SPS	Scottish Prison Service
STI	Sexually transmitted infection
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
WEPHREN	Worldwide Prison Health Research & Engagement Network
WHO	World Health Organization

Introduction

Prison health as public health

Globally, over 10 million people are incarcerated on any given day (1). Despite reductions in crime rates, imprisonment continues to be widely used and the global trend indicates an increase in the prison population. However, in Europe the prison population declined by 21% between 2000 and 2015, mainly driven by the substantial reduction of the Russian prison population, which decreased by 37% in the same time period (2). The majority of people in prison are serving shorter sentences, come from the most deprived parts of the community, and have poor health profiles (3). Due to the high number of people circulating through the prison system, addressing the health of people in prison impacts not only on the individual level, but also at population level through, for example, treatment and prevention of communicable diseases. Improving the health of people who experience imprisonment also has the possibility of reducing health inequalities as well as re-offending (4).

The United Nations (UN) acknowledges that people in prison have the right to be treated with dignity and that health is a human right. The Basic Principles for the Treatment of Prisoners (the Mandela Rules), adopted in 1990 and revised in 2015, sets out the right to health for imprisoned people. The Rules state that people in prison should have access to healthcare of the same standard as in the community, and that prisons need to be organised in a way that promote and improve health (5, 6). In 2013, a policy briefing on good governance of prison health was published by the World Health Organization (WHO) and the United Nations Office of Drugs and Crime (UNODC). The briefing provided recommendations, in line with wider European health policies, that healthcare in prisons should be provided under the ministry of health (rather than the ministry of justice), with a holistic view on improving health of people in prison (7).

Health promoting prisons

The recognition of prison as an arena for health promotion builds on the concept of health promotion, adopted in The Ottawa Charter for Health Promotion in 1986 (8). While the concept of health promoting prisons has been adopted in parts of the world, it has been more prominent in some parts than other. The WHO European Region, where a dedicated prison health programme was established within the WHO Regional Office for Europe in 1995, has been a key driver of the concept (4). Woodall and Dixey (9) argued that ideological differences, restricted resources (particularly in low- and middle-income countries), lack of knowledge of prison healthcare structure and priorities, has limited the adoption of health promoting prisons outside of the European Region. Further, they suggested that health promoting prisons, as well as health promotion more generally, remains “Eurocentric in its origins and value base” (p.59) (9). Yet, even within the European Region, poor practices relating to the treatment of people in prison have been highlighted and prison health remains a challenging area for policy makers, health professionals, third sector organisations, and researchers (7).

Health of people who experience incarceration

Communicable diseases

Communicable diseases, including blood-borne viruses (BBVs), tuberculosis, influenza, measles, mumps and rubella, viral hepatitis, tetanus, diphtheria, and sexually transmitted infections (STIs) are all more common among people in prison than the general population. Factors such as individual vulnerability, environmental factors, and risk behaviours contribute to the higher prevalence (4). Global estimates for several communicable diseases show that the rates in imprisoned populations is 15.1% for hepatitis C, 4.8% for chronic hepatitis B, 3.8% for HIV, and 2.8% for active tuberculosis. Rates vary by geographical regions, with East and Southern Africa having the highest levels of HIV (15.9%; 95% CI = 11.8–19.8), followed by West and Central Africa (8.2%; 95% CI = 6.2–10.5), Western Europe (4.2%, 95% CI = 2.7–6.1), and Eastern Europe and Central Asia (4.1%; 95% CI = 1.4–8.0). In contrast, the highest estimates of hepatitis C (HCV antibodies) prevalence are found in the Asia Pacific region (20.6%; 95% CI = 15.4–26.4), and Eastern Europe and Central Asia (20.2%; 95% CI = 11.8–30.1). The highest estimates of hepatitis B (HBsAg¹) are in West and Central Africa (23.5%; 95% CI = 19.8–27.5), followed by Eastern Europe and Central Asia (10.4%; 95% CI = 1.9–24.6) (10). Injecting drug use is a contributing factor for the high rates of BBVs in the prison population, whereby implementation of effective treatment and prevention models (such as opioid agonist therapy) can reduce prevalence (11). In the WHO European Region, long- or short-term agonist pharmacotherapy is available in prisons in 29 out of 40 Member States, and 20 report that mutual aid or self-help treatment programmes are available (12).

Noncommunicable diseases (NCDs) and risk factors

NCDs are a major public health challenge for the population as a whole. In 2012, around 70% of all deaths globally were caused by NCDs (13). The majority of NCD mortality occurs in low- and middle-income countries, yet most of the research undertaken on NCDs in prisons are from high-income countries. Four categories of NCDs; cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes, account for 82% of NCD deaths. Risk factors include, but are not limited to, inadequate diet, physical inactivity, substance misuse, and smoking. All these issues are concerns for the prison population (4).

Pooled estimates from low- and middle-income countries show that reported prevalence during imprisonment was 56.0% for smoking, 16.0% for alcohol, 25.0% for illicit drug use, and 1.6% for injecting drug use (14). Similarly, smoking rates in prisons in Australia and Europe has been reported to vary between 64.0% and 91.8% (15), rates that exceed the prevalence of the general population up to 62.6 times (16). Across studies, mainly from the USA, pooled prevalence rates for alcohol use disorders was 24% (range 16–51% for males and 10–30% for females). Pooled prevalence of drug use disorders was 30.0% (95% CI = 22–38) and 51.0% (95% CI = 43–58) for males and females, respectively (17). Food systems in prisons varies greatly and current research is lacking to fully provide information on weight-related issues whilst incarcerated. A summary of available research found that weight gain is common (18), though a systematic review of weight among people in prison found that the rate of obesity among males in prison vary from 8.1% to 55.6% (average of 21.5%) (19). In studies where prevalence rates were compared, the rate was the same or lower than in the general population for males, but rates of obesity in imprisoned females were higher than the general population (20). In Australia, data show that the rate of diabetes among both indigenous and non-indigenous prison entrants were similar to that of the general population for the same age categories (21). In contrast, data from state and federal prisons in the USA showed that the overall rate of diabetes/high blood sugar was 9.0%, compared to 2.9% in the general population ($p < 0.05$) (22).

¹ Hepatitis B surface antigen

Mortality

Mortality among people who experience incarceration is not solely isolated to deaths occurring in custody, but also relates to an increased mortality risk after release. Within prisons, both natural causes and self-inflicted deaths (suicide) occur, with suicide being the leading cause of death. The rate of suicide among prison populations are higher than the general population, and many risk factors specific to incarceration exist, including living in a single occupancy cell (23).

Whilst the prison population overall has poorer health than the general population, some studies have identified a lower mortality risk, particularly for natural causes (24–26). For example, a study on mortality in incarcerated males aged 18–75 years in state prisons in USA between 2001 and 2010 showed an overall mortality rate of 248 per 100 000 inmates, compared to 623 per 100 000 residents. However, white males had an increased mortality rate, compared to their non-incarcerated counterparts (370 and 344 per 100 000, respectively), specifically in the higher age groups 45–54, 55–64, and 65–75 years. Increased mortality rates in white males applied to most conditions, but increased rates were evident for cancer, heart disease, respiratory illnesses, diseases of the liver, AIDS-related causes of death, and homicide. Specific factors related to the increased mortality were reported as higher age at the time of admission, longer time in prison and being incarcerated for a violent offence (25). Similarly, a study of mortality among people who had experience of incarceration in Scotland between 1996 and 2007 found that whilst the standard mortality rate (SMR) for people outside of prison was higher than among people who had not been incarcerated, SMR for males in prison (which accounted for only 2% of deaths) was lower than the general population (26). However, selection bias relating to the fact that people with severe illness may be granted early release, a community sentence, or reduced time to serve may explain that rates have been reported as lower than the general population. Moreover, certain risk factors may decrease whilst incarcerated and thereby reduce the risk of death, but “the extent to which this finding is attributable to the aforementioned selection biases or to a protective effect of prisons, or some combination of both, is not clear” (p. 960) (27).

Upon release from prison, there is significant evidence showing an increased mortality risk, particularly in the immediate first days and weeks (3). A systematic review and meta-analysis of all-cause mortality found that the crude death rate (CDR) ranged from 720 to 1037 per 100 000 person-years. Whilst no pooled SMRs were reported, all included studies found that the SMR was higher in younger age groups. Of the total number of deaths included in the study, from a total of 18 cohort studies, 18.0% were due to drug-related causes, 9.0% homicide, and 8.0% to suicide (28). Substance misuse is a particular issue for risk of death following release from prison. A longitudinal cohort study from Sweden, where the all-cause mortality rate was 1205 per 100 000 person-years, found that of the total all-cause deaths, 34.0% of deaths in males and 50.0% of deaths in females were potentially attributable to substance use disorders (29). Similarly, a case-control study from Washington State, USA, found that the odds ratio (OR) for all-cause mortality was 1.54 (95% CI = 1.16–2.06). Other risk factors included being homeless upon release (OR = 1.53; 95% CI = 1.06–2.23), a history of tobacco use (OR = 1.51; 95% CI = 1.07–3.30), having received medication for a psychiatric disorder within 60 days before release (OR = 2.38; 95% CI = 1.71–3.30), and cirrhosis (OR = 4.42; 95% CI = 1.63–11.98). Specifically, for the risk of mortality caused by overdose, the study showed that having received psychiatric medication (OR = 2.44; 95% CI = 1.55–3.85), screening positive for substance misuse (OR = 2.33; 95% CI = 1.32–4.11), a history of injecting drug use (OR = 2.43; 95% CI = 1.53–3.86), problem use of opiates and sedatives in the six months before incarceration (OR = 2.81; 95% CI = 1.40–5.63), and a history of panic disorder (OR = 3.87; 95% CI = 1.62–9.21) was related to the risk of dying from an overdose. Treatment for substance use disorder during the first incarceration had a protective effect on both all-cause and overdose mortality (30).

Health among incarcerated people in Scotland

The Scottish prison population

The Scottish prison estate comprises 15 prisons, of which 13 are managed by the Scottish Prison Service (SPS) and two by private companies. Nine of the 14 Scottish health boards have prisons located in the area (31). The Scottish prison population as of 10 August 2018 was 7756 people in custody. Of the total population, 79% were sentenced, 17% were untried, and 4% had been convicted and awaiting sentence. (32). ² According to the 2017 SPS Prisoner Survey, more than half of incarcerated people serve a sentence of four years or less (see Figure 1). The rate of people in prison in Scotland in 2017 was 166 per 100 000, compared to 98 per 100 000 in Northern Ireland and 179 per 100 000 in England and Wales (33).

The majority of the prison population are male (95%), and 2013 statistics on age distribution most prisoners (59%) were under the age of 35 years. Between 2005 and 2013, the proportion of people aged 45–54 increased by 4% and the age group 55–64 years increased by 1% (34). The general trend in the UK indicates that the prison population is ageing, creating challenges for prison healthcare services in caring for chronic health conditions as well as providing palliative care in prisons (33).

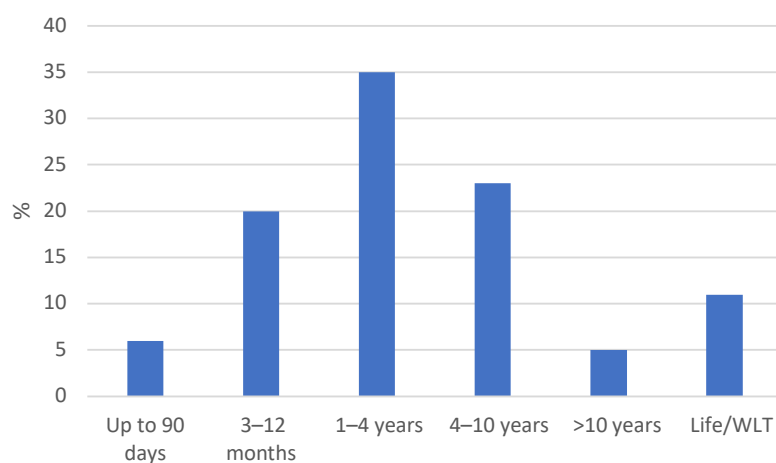


Figure 1. Length of prison sentence. Source: 16th Prisoner Survey 2017 (35)

Health in the Scottish prison estate

Whilst health of people in prison is poorer than that of the general population, there is no national reporting system on prison health in Scotland. In 2007, a comprehensive health needs assessment was undertaken, which provided an overview of key concerns regarding health of people in prison (36). This section will give an overview of key figures from that health needs assessment and, where available, more recent figures on health among people in Scottish prisons. Whilst the data reported in the health needs assessment report from 2007 indicated overall prevalence rates for various conditions, great variations were found between prisons (36).

The 2017 Prisoner Survey, conducted by the SPS, generated responses from 3145 people in prisons in Scotland (46% response rate). The survey includes questions on self-reported health and engagement with risk behaviours, such as drug use. The findings showed that 34% reported having a disability, 35% reported having a long-term health condition, of which 66% reported that staff in the prison were aware of their condition (35).

² Figures as of 10 August 2018. Annual population in 2016–2017 was 7552

Communicable diseases

Prevalence of HIV was reported in the 2007 health needs assessment as 0.2% of the prison population. The data was extracted from the GPASS system (General Practice Administration System for Scotland), which has since been discontinued as part of the eHealth Strategy 2008–2011 (37). GPASS data from 2007 showed an overall prevalence of 1.5% for hepatitis B and 5.4% for hepatitis C (36). However, a study conducted in 14 of the 15 prisons in Scotland in 2010–2011 found that the prevalence of hepatitis C was 19.0%, with a higher prevalence among people who reported injecting drug use (53.0%). The authors found a low incidence (0.6%–0.9%), which they concluded was likely to relate to the low levels of in-prison injection drug use reported (2.5%–8.0%) and the high coverage of opiate substitution therapy (OST) among injecting drug users (57.0%) (38). Sexual health and the prevalence of sexually transmitted diseases (STIs) were assessed based on GPASS data in 2007, using Chlamydia as the indicator for sexual health. The GPASS data included no cases of Chlamydia, whereas a small local study (Edinburgh prison) found a prevalence of 12% in young males (36).

NCDs and risk factors

The 2017 Prisoner Survey and the 2007 health needs assessment report indicated that noncommunicable diseases and associated risk factors are prevalent in the Scottish prison estate (35, 36). Data extracted from GPASS in 2007 showed that 1.7% of people in prison had diabetes and self-reported rate from the SPS survey around the same time was 2.3%. Other conditions reported include coronary heart disease, which 2% of the prison population had according to GPASS data from 2007. This prevalence rate was lower than the general population at the time (3.5%–4.5%). However, self-reported rates among people in prison was higher than the GPASS data; 4.4% (reported having a ‘heart condition’). In the 2017 Prisoner Survey, around two fifths (43.0%) reported meeting the government recommendation of moderate physical exercise five times per week or more, whilst 28.0% did moderate exercise 2–4 times per week and 29.0% once per week or less (35).

Regarding mental health, 14% of people in prison had a history of psychiatric disorder according to 2007 GPASS data (36). Mental health problems and substance misuse often co-exist in the prison population (39), and substance misuse is widely reported among people in Scottish prisons. The results from the Prisoner Survey showed that 36% reported having a drug problem outside prison, of which 39.0% reported that they had used drugs during their prison sentence. Specifically, 18.0% had used new psychoactive substances (NPS) (35); drugs that have received increased attention for causing problems within prisons in Scotland (40). However, the issue is Europe-wide and research from the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA) suggests that despite the low number of people in prison who use NPS, the level of harm is significant (41). Synthetic cannabis was the most commonly used form of NPS (35), in line with trends from other European countries (41). In addition to illegal drugs, 68.0% of respondents to the 2017 Prisoner Survey reported being smokers (35). Data from the 2015 Prisoner Survey, for which combined scores on the Alcohol Use Disorder Identification Test (AUDIT) were analysed, showed that 26.9% were defined as hazardous drinkers, 6.4% as harmful drinkers, and 32.9% had scores indicating possible dependence (42).

Mortality

The latest figures for deaths in Scottish prisons, for which all cases had been determined³ are from 2013 and showed a total of 24 deaths in prison custody. Of those, one third were caused by suicide, two thirds by natural causes (expected or sudden deaths), and 8% were caused by overdose (43). The number of overdoses from opioids, in general, led the Scottish Government to introduce the National Naloxone Programme in 2011 (44). Naloxone is a drug that reverses the effects of amounts of opioids taken that may result in an overdose. Before the programme was implemented, data showed that 9.8% of those who died of an opioid overdose had been released from prison in the last four weeks. Following implementation, the proportion declined to 4.1% in 2014, 4.7% in 2015, and 3.5% in 2016 (45). A study of mortality among people incarcerated in Scotland between 1996 and 2007 showed that the most common causes of death was behavioural disorders, followed by suicide, cardiovascular diseases, and alcoholic liver disease. Of the deaths recorded during the study period, 98.0% occurred outside of prison. Adjustments for deprivation in SMR showed that deprivation accounted for 26.0% of excess risk of death in males and 18.0% in females. For deaths that occurred outside of prison, people who had been incarcerated had a higher SMR than the general population in both males and females (SMR = 2.2; CI = 2.4–2.6 and SMR = 5.9; CI = 5.4–6.5, respectively) (26).

Prison health governance in Scotland

Healthcare in prisons in Scotland has during the last decade seen a shift in its prioritisation, governance and structure. Aligned with international recommendations from WHO (7), the responsibility for prison healthcare services was in 2011 transferred from SPS to the National Health Services (NHS) Scotland. The transfer followed on from recommendations of the Prison Healthcare Advisory Board (PHAB), set up by Scottish Ministers, which was established in 2007. In their report, the PHAB concluded that transferring prison healthcare services was feasible, with a key justification of equivalence of care in four key areas:

- tackling health inequalities among people who experience incarceration,
- facilitate continuity of care,
- create a sustainable service, and
- align with international recommendations and standards (Standard Minimum Rules for the Treatment of Prisoners and the Declaration of Prison Health as Part of Public Health) (46).

The PHAB's recommendations also acknowledged that Her Majesty's Chief Inspector of Prisons in Scotland supported the transfer from SPS to NHS Scotland. The report from PHAB noted the following:

"Her Majesty's Chief Inspector of Prisons in Scotland, on the advice of NHS Quality Improvement Scotland who raised significant concerns with him about quality of healthcare provision, recommended in his Annual Report for 2005/2006 that healthcare should be provided by the NHS. Although improvements had been made in recent years he recognised the "desperate state" most prisoners are in on admission and that the healthcare staff in prisons do not have anything like the resources of the NHS at their disposal". (47)(p.6)

The transfer of prison healthcare services was implemented on 1 November 2011. In 2016, the Royal College of Nursing (RCN) published a report entitled "Five years on", which examined the transfer of the prison healthcare services to NHS Scotland and to what extent it had met the set out aims (48).

³ That is cases that are not indicated as 'not determined' and awaiting a Fatal Accident Inquiry (FAI)

The report identified some positive outcomes of the transfer, such as improved access to a wider range of clinical expertise, which the PHAB had noted was limited under the SPS model (46), and improved links with services in the community. However, the report also outlined that there was a lack of progress in the five years following the transfer. Primarily, shortcomings in progress were concluded to relate to lack of knowledge of the health of the prison population, an issue related to lack of outcome data and systematic monitoring. Furthermore, the slow progress was suggested to relate to issues with funding allocation and resourcing under the new NHS model, particularly around investments for specific services such as mental health. Whilst systemic factors were addressed throughout the report, staff morale was highlighted as a problem along with recruitment and retention of the workforce (48).

In response to the RCN report, the Scottish Parliamentary Health and Sport Committee (SPHSC) issued an inquiry into i) delivery and cost of health and social care in prisons; ii) access to healthcare, social care, and medicines in prisons; and iii) the effectiveness of health and social care in prisons (49). The SPHSC concluded, based on the evidence heard in the inquiry, four key areas in which further work is needed in order to enhance prison healthcare:

- governance and leadership,
- outcomes and performance,
- health and social care integration, and
- clinical IT.

In response to the issues highlighted in the RCN report, as well as the inquiry, the Scottish Government established a dedicated programme under the Health and Justice Collaboration Improvement Board, called the Health and Social Care in Prisons Programme Board. The aim of the Programme, established in 2018, is to lead the work on improving prison healthcare by “removing structural barriers to delivery” (50). Health in justice settings has also been addressed through various policy documents, including the *Strategy for Justice in Scotland* (51), *Justice in Scotland: vision and priorities*(52), the *National Community Justice Strategy* (53), and the *Mental Health Strategy* (54).

National Prisoner Healthcare Network

The National Prisoner Healthcare Network (NPHN) was set up after the transfer in 2011 to support service provision in prisons. The Network aligns with priorities set out by the Scottish Government; improving health outcomes, reducing inequalities, and reducing offending and reoffending. A number of working groups have been established to work on specific issues, such as screening services, prison pharmacy, substance misuse guidance, head injuries, and management of NPS.

The NPHN is linked to the 5 Nations Health and Justice Collaboration; a group of health and justice representatives from England, Wales, Scotland, Northern Ireland, and the Republic of Ireland. The 5 Nations Collaboration works as a forum for discussion on health and justice-related issues in the nations, but also informs the work of Public Health England (PHE), in its role as a Collaborating Centre for Health in Prisons to the WHO (55). The Collaboration has a Scottish coordinating group (SCG), which has the focus of contributing to overall agenda by sharing experiences from Scotland with the main group as well as sharing input from the 5 Nations to key stakeholders in Scotland. One of the objectives of the SCG is to “coordinate and promote research priorities and work collaboratively to stimulate and support research in the field of the 5 Nations”. The SCG includes representatives from the NHS, SPS, Scottish Directors of Public Health, NPHN, and the NPHN Advisory Board (56). In July 2018, 5

Nations held a meeting in London, which focused on research, and work during the same year has included the development of a research statement. In addition to coordinating across the five nations, the Group also supports the Worldwide Prison Health Research & Engagement Network (WEPHREN); a global open access network with the aim to promote knowledge exchange and support, and share and stimulate research activities in the area of health of people in prisons (57).

Justification for the event

Whilst there has been an increase in activities in the area of prison health at the policy level and in the area of healthcare provision and structure over recent years, there is a lack of formal coordination in research efforts across the board in prison health. An event was organised in 2016 by the MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, though with a specific focus on with focus on methodological and ethical dimensions of specifically social science research. Scoping work with key researchers and stakeholders in early 2018 indicated that there was an interest and a need for an event to bring stakeholders together and stimulate debate around what the research agenda in Scotland should look like in order to inform policy making and the new priorities set up by the Scottish Government. A small-scale event, a Colloquium, was therefore planned for 4 June 2018 in Edinburgh, which through a ‘snowball’ method invited people involved with the NHPN and beyond. The following sections outline the event and feedback from the participants, development of further work on the backdrop of the event, and reflections.

Research in the prison setting is important in order to describe the nature and size of health issues, and provide evidence for the effectiveness of interventions or provision of specific services. Furthermore, understanding services or interventions that are not effective is equally important in order to reduce waste of resources. Health and social care research assists with:

- identifying people at risk of getting ill and help to prevent illness,
- providing the best advice and treatments for people,
- sharing knowledge and understanding about different conditions,
- understanding people’s perception of services,
- assessing how effective and safe services are,
- improving the environment, health and wellbeing of a local, national and global population, and
- exploring staff experience

Prisons are not an exception when it comes to conducting research that aims to achieve the above objectives. In order to facilitate high-quality health and social care in prisons, a connected research community, informed by research that is being undertaken within Scotland, will facilitate its development. The Colloquium aimed to bring key stakeholders together to provide an overview of research in health and social care in prisons, and to present previous and current projects.

Event description

The event was held at the Edinburgh Centre for Carbon Innovation. A list of potential attendees was compiled using the authors' existing network as well as the NPHN, which generated a list of approximately 90 people working across different sectors in prison health in Scotland. An invitation was sent through Eventbrite to all potential attendees, with a note that spaces for the event were limited. The final number of registered attendees was 50, of which 40 attended on the day of the event.

Presentations

The presentations included a wide range of topics, from speakers with diverse professional affiliations, including the Scottish Government, SPS, academic institutions, RCN, and the NPHN. Table 1 shows a summary of the contributing speakers and the title of their talk. The event was chaired by Professor Aisha Holloway, with support from Dr Lisa Schölin and Dr Iris Ho.

Table 1. Contributing speakers

Speaker	Organisation	Title
Aileen Campbell MSP	Scottish Government	Keynote
Alex McMahon	NHS Lothian	Keynote
Andrea Mohan	University of Stirling	A whole-prison approach for cardiovascular risk reduction in Scotland
Ashley Brown	University of Stirling	Tobacco in Prisons Study (TIPs)
Denise Downie	SPS/University of Dundee	Mouth Matters – People in Prison health Coaching for Scotland
James Fraser	Abertay University	An exploratory study of male ex-prisoners' experiences of health and healthcare in prison and the community
James Taylor	University of West of Scotland	Do the mental health and wellbeing needs of military veteran prisoners differ from non- military veteran prisoners?
Jess Davidson	Royal College of Nursing	Custodial healthcare – tackling health inequalities and workforce wellbeing and creating a person-centred culture
Kirstin Leath	Scottish Prison Service	A changing prison population
Lynn Kelly and Sue Levy	University of Dundee	Health and Social Care Integration in Scottish Prisons
Orlando Heijmer-Mason	Scottish Government	Prison Health Research – current and future

The event used a mixture of presentation formats; keynote speakers and representatives from the SPS, RCN and the Scottish Government had a longer time slot (15 minutes or more), whereas research presentations focusing on specific projects followed a 'lightning' approach with only five minutes to give a brief overview, followed by questions.

The two keynote speakers of the day were Ms Aileen Campbell MSP, Minister for Public Health and Sport, and Professor Alex McMahon, Executive Director, Nursing, Midwifery and Allied Healthcare Professionals and Executive Lead, REAS and Chair of NPHN. Ms Campbell used the event to announce a

new funding stream from the Scottish Government, supporting innovation and partnerships involving local NHS health boards and SPS. The £100 000 fund was created to allow partners to identify their own priorities, providing that projects are carried out in partnership⁴. The funding made available forms part of the Health and Social Care in Prisons Programme. Professor McMahon is the chair of the NPHN, and as a nurse by background has a strong commitment to developing health and healthcare in prisons, as well as developing the workforce in this setting, which was the focus of his presentation.

Event feedback

Total of 19 responses to the post-event survey were received, corresponding to a response rate of 47.5%. Of the respondents providing their professional role, 27.8% were academics, 11.1% were prison healthcare professionals, 5.6% were prison service professional, 16.7% were from third sector organisations, and 33.3% defined their professional role as “Other”.

The overall rating of the event, on a 10-point Likert scale, was 7.6. Figure 2 shows the overall feedback relating to satisfaction with aspects of the event, including venue, networking, catering, speakers, and, programme content. Overall, most respondents were extremely or very satisfied with the venue and networking opportunities. Whilst around 42.1% were extremely satisfied with the program content, 47.4% were moderately satisfied.

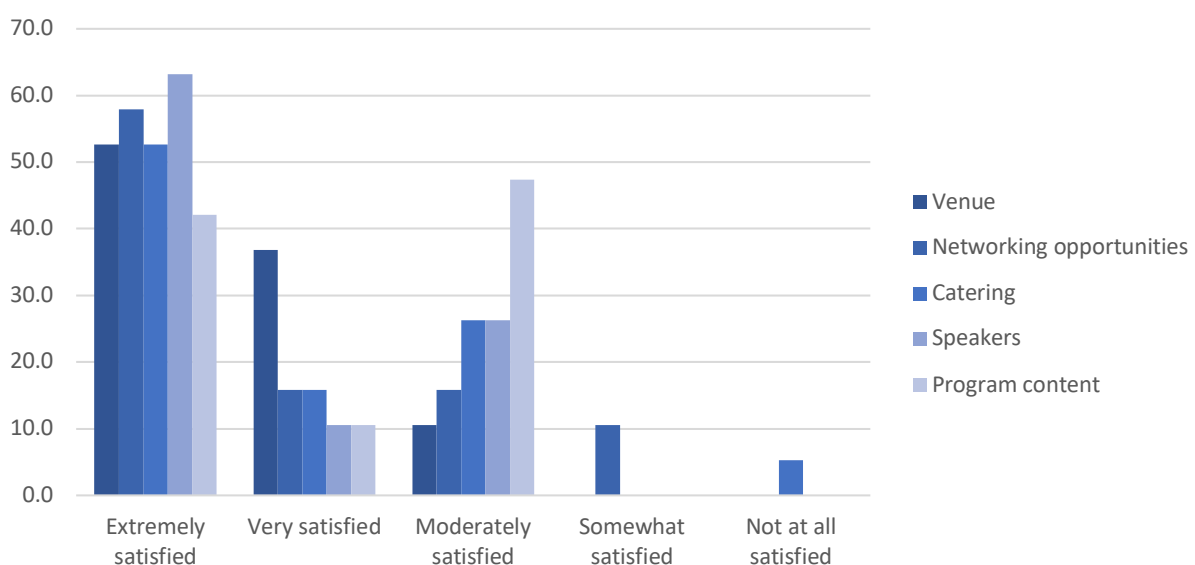


Figure 2. Rating of venue, networking, catering, speakers and programme content of the event

Respondents were asked how likely they were to attend a similar event in the future. The majority of respondents (89.5%) were likely or very likely to attend a future event, whereas 10.5% were neutral (Figure 3).

⁴ <https://beta.gov.scot/news/improving-prisoner-healthcare/> (Accessed 2018-07-24)

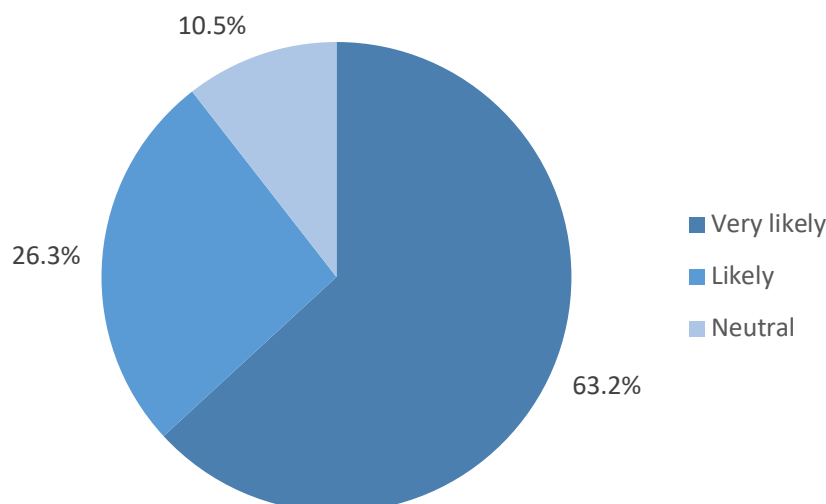


Figure 3. Likelihood of attending a similar event in the future

The majority of respondents reported that they had made professional connections at the event; 33.3% had made new connections that they will follow up in the future and 38.9% had made contacts that they already had followed up on. A further 11.1% responded “Maybe” and 16.7% responded “No”.

Respondents were given the opportunity to provide free-text responses in regards to: i) what they enjoyed most about the event, ii) what they least enjoyed about the event, and, iii) how they/their organisation would benefit from the event. In regards to aspects that respondents enjoyed, common responses included the opportunity for networking, and acquiring new information or knowledge as well as becoming aware of research they had not known about previously. Specifically, the presentations by the Scottish Government, NHS, Professor McMahon, and MSP Aileen Campbell were mentioned as valuable contributions.

I was encouraged to see prison healthcare research being discussed as an important part of the future of the service for individuals accessing it and also for the teams of healthcare professionals supporting patients in a custodial environment

In regards to what respondents enjoyed the least about the event, the majority of comments related to the timing of the presentations; some noted that the keynote presentations were long, whereas the research presentations were regarded as too short. Several respondents noted a lack of discussion time, which they believed was important. In addition, the lack of a theme tying the presentations together was mentioned as a negative aspect of the event, as the prison setting was the only key component that connected the presentations. Finally, the venue was noted as difficult to get to for people travelling a further distance.

The content of presentations was not closely themed nor could it cover all relevant topics; so whilst the presentations were interesting, they did not spur discussion of change.

Regarding the benefits respondents felt the event had to themselves and their organisations, a common theme related to widening the understanding of the prison health landscape in Scotland, networking, and, a greater awareness of ongoing developments in the area.

New contacts, glad to see the academic community coming together in an area which has had little strategic direction. Would like this to be the start of something rather than a one-off.

Future research

Defining prison health research priorities using the Delphi method

The area of prison health covers a wide range of health conditions and risk factors, which are experienced to a higher extent by people in prison than the general public. Aligning and prioritising research in this area is therefore important. With prisons being a challenging place to conduct research, expert input can facilitate the shaping of a research agenda which generates evidence to support policy and practice aimed at improving the health of people in prison, reducing health inequalities, and reoffending.

Work to define research priorities was undertaken in Canada in 2015. Kouyoumdjian et al. (58) conducted a Delphi study – an expert survey with several iterations, aimed to achieve consensus (59) – which included academics, clinicians, healthcare staff, people working in policy, and advocacy. The majority of participants worked in research. In a first round, 59 participants responded and provided 5–10 research priorities for prison health in Canada for the next 10 years. A total of 71 topics (collated from suggested 410 topics) were identified, which were grouped under 13 distinct categories. Identified priorities included, for example, categories such as injury, research ethics, reintegration and continuity of care, social determinants of health, and prevention of detention or incarceration. Consensus (defined as 70% or more of respondents indicating ‘agree’ or ‘strongly agree’) was achieved for 45 topics (58). The Delphi study, along with journal articles reviewing the health status of prisoners (60, 61) and interventions to improve health during and after prison (62), were used to inform national discussions in Canada about research initiatives in this field through a national meeting.

Launch of a Scottish prison health Delphi study

In the planning of this Colloquium, the aim was to use the event as a platform for developing future research priorities, through facilitated discussions on participants’ views on research to achieve improved health and reduced inequalities among incarcerated people in Scotland. However, due to the time limitations of a half-day event, as well as discussions with international experts, it was decided to further extend on this aim through a systematic approach. Following discussions with Dr Fiona Kouyoumdjian, it was determined that a similar approach would be beneficial to further develop prison health research in Scotland.

At the end of the Colloquium, the prison health Delphi on research priorities was launched and participants were informed about the aims and objectives of the study. As part of attending the Colloquium, participants were asked whether they consented to being contacted again and they were informed that they would be sent the Delphi survey in a few months’ time. The project will adopt the same approach as the work of Kouyoumdjian and colleagues (60, 61), to outline research priorities relating to health of people in prison in Scotland. A scoping review will be undertaken, covering

research conducted from 2007 until 2018. The year 2007 is used as a cut-off point due to the health needs assessment published that year, which included relevant literature around prison health (36). The review will aim to explore what types of research has been undertaken, key researchers, topics research has focused on, and current gaps.

Aims and objectives of the Delphi study

The aim of this study is to define priorities for prison health research in Scotland for the next 15 years. Secondary aims are to inform future research efforts to improve the health and healthcare of people who experience detention and incarceration in Scotland; and to assist policy makers, service providers and stakeholders with an evidence base from which to achieve this. The Delphi study has been developed on the backdrop of the Colloquium with academics and key stakeholders. The objectives for this study are:

1. To conduct a scoping review of published research on prison health in Scotland since 2007, with the primary aim of identifying researchers to invite to participate in the Delphi process, alongside stakeholders identified through professional networks of the study investigators and the NPHN. Stakeholders will be those considered knowledgeable about, and interested in, prison health research; persons working in government agencies; non-governmental organisations; and individuals with lived experience of incarceration in the Scottish prison estate. The secondary aim of the review is to summarise identified research, to provide an overview of the topics and types of research that has been undertaken, as well as remaining gaps.
2. To conduct a Delphi process with key stakeholders to define priorities for research in prison health in Scotland for the next 15 years.
3. To produce a report and academic paper that identifies the priorities to inform the research agenda for prison health in Scotland (with relevance to other countries) enabling key stakeholders to advocate for: specific research to be conducted, dedicated research funding development of programmes of research focused on some of the priorities identified in the report to advance the health and healthcare of this population.
4. To host a policy round table event with Scottish Government and the NPHN to launch the report and discuss findings.

The study will also seek to align with the global prison health agenda, where the need for improved collection and audit of data within the prison setting is noted in the *Conclusions of the WHO international meeting on prisons and health Lisbon 2017* (63). The results from the study will be shared with participants of the Colloquium, Scottish Government, NHS, SPS, NGOs and third sector organisations, and the wider academic community through research conferences. A global Delphi study on research priorities, coordinated by WEPHREN, is being planned and the Scottish Delphi study will help inform and complement a global study.

Discussion

The subject of prison health is on the public health agenda in Scotland, with increased focus given following the RCN report on the progress in prison healthcare since the transfer of services from SPS to NHS in 2011 (48). The increased attention from the Scottish Government indeed is an indication that the health of people experiencing incarceration in Scotland is a priority. However, the fact remains that people in prisons remains a population with complex health needs and that prisons are challenging places to engage people in health promotion as well as providing care. Developing the research agenda in Scotland, therefore, will expand the evidence base on health among people in prison in Scotland, healthcare system, and healthcare services. Currently there is limited knowledge of, for example, the extent of communicable diseases in prison. The 2007 health needs assessment provided an overview of a range of communicable diseases and NCDs (36), however the RCN report highlighted the lack of a national reporting system on health of people in prison (48).

In 2016, a prison health research symposium was organised by the MRC/CSO Social and Public Health Sciences Unit, University of Glasgow, with focus on methodological and ethical dimensions of conducting health-focused social sciences research through and beyond prison settings. Since 2016 there has been limited activities in the area, however one of the SCG's objectives is to coordinate and promote research (56) and work is ongoing to do so at Scotland level.

With recent developments at the policy level in the area of prison health in the Scottish Government it is the right time to further progress this area of research. Harnessing the momentum already gained is essential, but for changes and efforts made by the Scottish Government to be effective, research is needed to define the prison population and their health and social care needs, effective interventions and key factors for reintegrating people with experience of incarceration into the community upon release and to ensure continuity of care is upheld. Lack of knowledge of the prison population's health needs was one of the key findings in the RCN report, and further research to improve that understanding will be valuable.

Prisons are difficult places to conduct research, however well-conducted studies are a necessity to ensure that people who experience incarceration are provided the same opportunity as people in the community to access evidence-based healthcare (64). The Colloquium and planned future work are steps to further enhance the research in Scotland on the health of people who experience incarceration. The Delphi study undertaken in Canada, the first of its kind, informed the development of journal articles (60, 61) and national discussion around prison health. The expertise gained through the Canadian experience will be of great value to the planned work. In addition, it has the potential outcomes of enhancing funding applications for research grants (as research can be designed to respond to identified priorities), informing decision makers in correctional settings, and to justify national and/or local work.

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